

Computational Intelligence Practical Projects

Practical 3: Challenge with SI Algorithms

Dr. Wenjun Wang, 31st Oct 2023

DDI: 8 pm on 23rd Nov 2023

In this practical project, you will be asked to take one of the following options.

Challenge A, PSO for 16-Queen Problem

For the N-Queen Problem, please implement and solve the 16-Queen Problem by PSO algorithm.

Please write clearly in your report with the following points:

- 1, problem description (10%)
- 2, solution encoding (10%)
- 3, objective function and constraint (20%)
- 4, models for PSO (20%)
- 5, algorithm design with pseudo code and parameters (20%)
- 6, result and analysis (10%)
- 7, more discussions (10%)

Please do not over 3 pages, if needed you can attached your code as a supplementary file.

Challenge B, Ant Algorithm for Solving TSP

Please pick up a tsp problem with a dataset, use ant algorithm to solve this problem. Give the optimal solution or you can compare your result with existed solutions.

Please write clearly in your report with the following points:

- 1, problem description (10%)
- 2, solution encoding (10%)
- 3, objective function and constraint (20%)
- 4, models for PSO (20%)
- 5, algorithm design with pseudo code and parameters (20%)
- 6, result and analysis (10%)
- 7, more discussions (10%)

Please do not over 3 pages, if needed you can attached your code as a supplementary file.